

**GERMAN ANTARCTIC EXPEDITION
1980/81 WITH FRV "WALTHER HERWIG"
AND RV "METEOR"**
**First International BIOMASS Experiment
(FIBEX)**

Data of micronekton and zooplankton hauls

by Uwe Piatkowski and Norbert Klages

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Contents Table

	page
Summary - Zusammenfassung	4
1. Introduction	5
2. Types of nets used and haul procedures	6
3. Treatment of catch	7
4. "WALTHER HERWIG"-cruise	
4.1. Station charts	8
4.2. Notes on station list	12
4.3. Station list	13
4.4. Comments to stations	25
5. "METEOR"-cruise	
5.1. Station charts	27
5.2. Notes on station list	30
5.3. Station list	31
5.4. Comments to stations	53
6. References	56

Summary

This report presents the plankton haul data collected during the German Antarctic Expedition 1980/81 with FRV "WALTHER HERWIG" and RV "METEOR". Most of the hauls were taken in conjunction with the First International BIOMASS Experiment (FIBEX). The report should serve as a useful source of information for the evaluation of preserved plankton material.

Zusammenfassung

Im vorliegenden Report sind die Stationsdaten der Planktonfänge zusammengestellt, die während der deutschen Antarktis-Expedition 1980/81 mit FFS "WALTHER HERWIG" und FS "METEOR" zusammengestellt wurden. Ein Großteil der Fänge fand im Rahmen von FIBEX (First International BIOMASS Experiment) statt. Zur weiteren Bearbeitung der konservierten Planktonfänge soll dieser Bericht als Informationsquelle dienen.

GERMAN ANTARCTIC EXPEDITION 1980/81 WITH FRV "WALTHER HERWIG"
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Data of micronekton and zooplankton hauls

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1. Introduction

The German Antarctic Expedition 1980/81 contributed to the international research on the Antarctic ecosystem coordinated by the BIOMASS programme (SCAR, 1977). During FIBEX (First International BIOMASS Experiment) in the austral summer 1980/81 (HEMPEL, G., 1981), FRV "WALTHER HERWIG" and RV "METEOR" served for the German research activities in the Antarctic.

This report is a revised and completed version of the "METEOR"-plankton haul data collection previously published by KLAGES (1982) in Ber. Polarforsch. 2. In addition to the revised "METEOR"-list, station data and station charts of all plankton hauls gathered during the "WALTHER HERWIG"-cruise are listed.

Most of the hauls were made in the German sector of the FIBEX survey area.

Apart from the actual station data, the report also gives information on the observed environmental parameters during the hauls, the computed volumes filtered by the plankton nets and general comments.

When the vessels were steaming with constant speed between the stations of net sampling a 50 KHz echo sounder was used to record the distribution of krill swarms and to compare the recordings with the krill abundance in the RMT 8 catches (KLINDT et al., 1982; MORGENSTERN, 1982).

The cruise of FRV "WALTHER HERWIG" consisted of two legs:
leg 1 20.Jan.- 4.Mar.1981 with participating in FIBEX and
leg 2 8.Mar.-26.Mar.1981.

The cruise of RV "METEOR" was divided in three legs:
ANT I 13.Nov.-18.Dec.1980, ANT II 3.Jan.-2.Feb.1981 and
ANT III 5.Feb.-10.Mar.1981.

Cruise tracks and cruise reports can be found in HEMPEL, G. (1982), HEMPEL, G. et al. (1982), ZEITZSCHEL & ZENK (1981), GERLACH (1981) and ANON. (1981).

The sorting of the plankton samples into taxonomic groups was begun during the cruise and has now been completed. A publication of the results is in press as No. 16 of this series.

The distribution of some taxonomic groups, especially of krill, krill larvae and postlarval fish is described by HEMPEL, I. (1982), KELLERMANN & KOCK (in press), NAST (1982),

PIATKOWSKI (1982) and SIEGEL (1982). A comparison of krill abundance between the 1975/76 and 1980/81 cruises is given by NAST et al. (1982).

We would like to thank Claudia Dieckmann and Elke Mizdalski for drawing the figures, Sigrid Marschall for compiling and typing station data and lists and Dr. Tilman Pommeranz for calculating the filtered volumes of the RMT nets.

2. Types of nets used and haul procedures

Five different net types for plankton sampling were used on the two vessels.

The Nansen Closing Net (NCN) described by NANSEN (1915) is a conical net with a circular mouth opening of 60 cm diameter. The mesh sizes of the filtering cones used were 200 μm ("METEOR", ANT I), 300 μm ("METEOR", ANT II), 100 and 300 μm ("METEOR", ANT III) and 335 μm ("WALTHER HERWIG").

The net was lowered vertically at speeds between 0.3 and 1.0 m/sec from a stationary vessel. It was hauled to its upper haul limit at 0.1 m/sec. Closing of the net was done by messenger weights.

The filtered volume was calculated by the difference of upper and lower haul depth and the mouth opening of the net.

The "Working Party 2-Net" (WP 2) as used three times on board RV "METEOR" is a vertical net very similar to the NCN (UNESCO, 1968).

The RMT 1+8 (RMT = "Rectangular Midwater Trawl") served as standard net for plankton sampling. Detailed descriptions of this net system are published by BAKER et al. (1973). The RMT 1+8 consists of two nets: the RMT 1 with a mouth area of approximately 1 m² and a mesh size of 320 μm and the RMT 8 with a mouth area of approximately 8 m² and a mesh size of 4.5 mm.

The standard RMT 1+8 haul was an oblique haul with a maximum haul depth of 140 m or 200 m. The closed net was paid out to the maximum haul depth, then opened and hauled in with heaving speeds of 0.2-0.5 m/sec. Vessel's speed during the haul was 1.5-3.0 kn.

Estimates of the water volumes filtered by the net during the haul are rather difficult as the size of the effective mouth area is dependent on the speed of the net through the water. Different speeds of the net cause different mouth angles and therefore different effective mouth opening areas. These effects had to be considered in the calculations and were described by POMMERANZ et al. (1983).

Only on RV "METEOR" the MOCNESS (= "Multiple Opening/ Closing Net and Environmental Sensing System") was used for collecting plankton. A description of this net system is given by WIEBE et al. (1976). The mouth area is 1 m², the mesh size 330 μm .

Data of filtered water volumes are directly recorded during the haul.

Only one double oblique haul with a maximum depth of 83 m was carried out with a BONGO-net (BGO) on FRV "WALTHER HERWIG". The mesh sizes of the two filtering cones used were 500 μm and 2000 μm . The diameter of the circular mouth opening was 0.61 m.

Additionally to the standard hauls with the RMT 1+8 a MESSHAI (MHA) was used three times on FRV "WALTHER HERWIG" to perform very fast oblique hauls. This multiple high speed zooplankton sampler is described by POMMERANZ et al. (1979). Like the MOCNESS it is a multiple opening and closing net system that can be used at ship speeds of 3.5 kn. The mesh size of the MESSHAI nets used was 300 μm . Data of environmental parameters and filtered water volumes can be directly recorded during the haul.

Some additional hauls with the RMT 1+8 that were performed to get undamaged and living specimens of different zooplankton groups for laboratory experiments are not listed. Material of these hauls was not preserved.

3. Treatment of the catch

Immediately after the catch was brought on deck the catch volume was estimated (displacement volume, only on FRV "WALTHER HERWIG"). Large animals such as fish and medusae were then sorted from the catch. If the catch was more than 2000 ml suitable subsamples were taken (usually 2000 ml).

The samples were fixed in 4% chalk-buffered formaldehyde solution. The acidity of the samples was controlled several times on board and if necessary samples were buffered to pH 7.

4. "WALTHER HERWIG"-cruise

4.1. Station charts

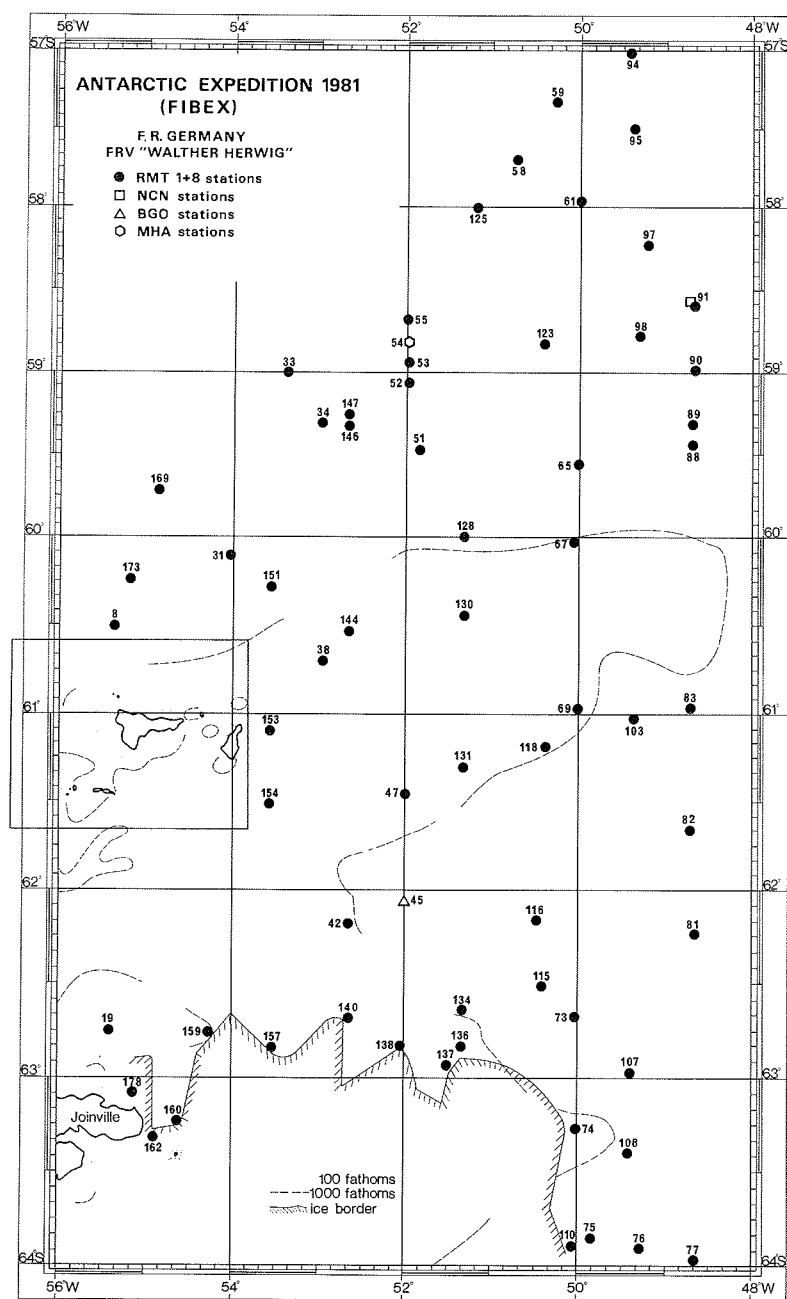


Fig. 1 Stations of zooplankton sampling during first leg of FRV "WALTHER HERWIG"-cruise in FIBEX area (26.Jan.-1.Mar.1981).

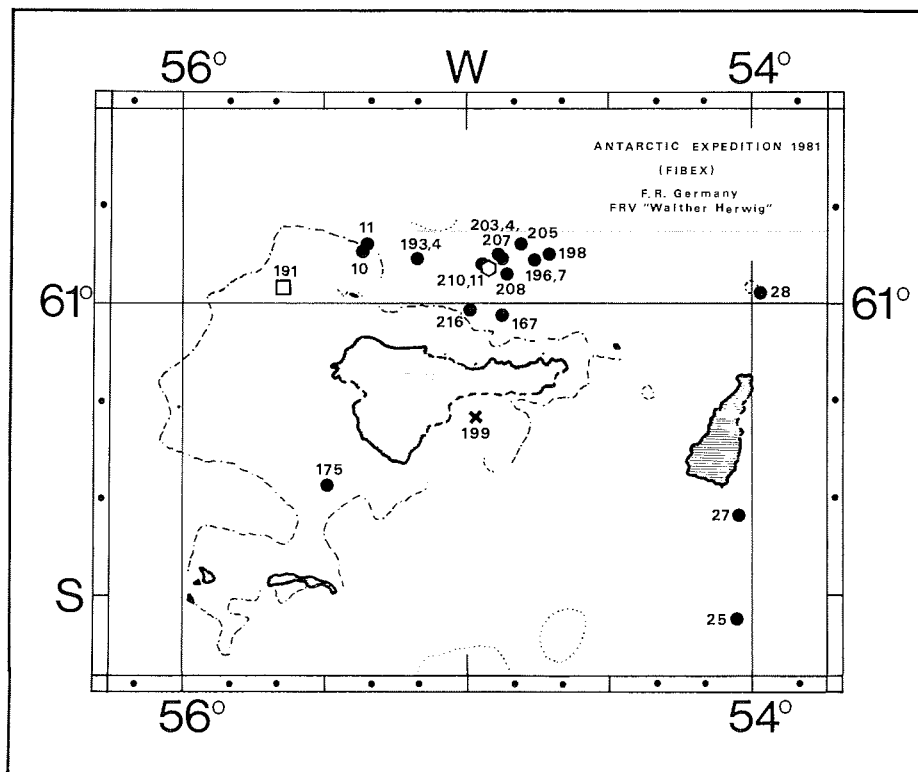


Fig. 2 Stations of zooplankton sampling near Elephant Island during first leg of FRV "WALTHER HERWIG"-cruise (26.Jan.-1.Mar.1981).

○ RMT 1+8 haul □ NCN haul
 ○ MHA haul x net cage experiment

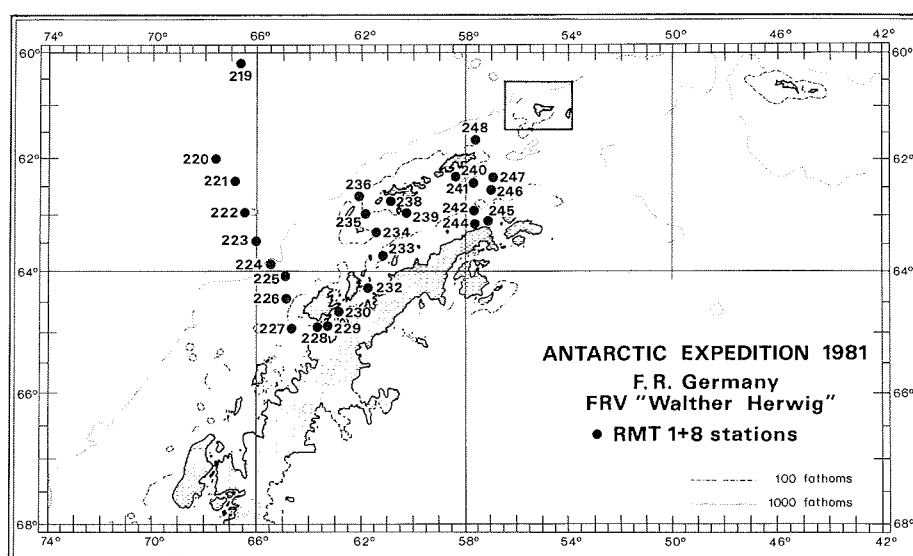


Fig. 3 Stations of zooplankton sampling during second leg of FRV "WALTHER HERWIG"-cruise (10.Mar.-19.Mar.1981).

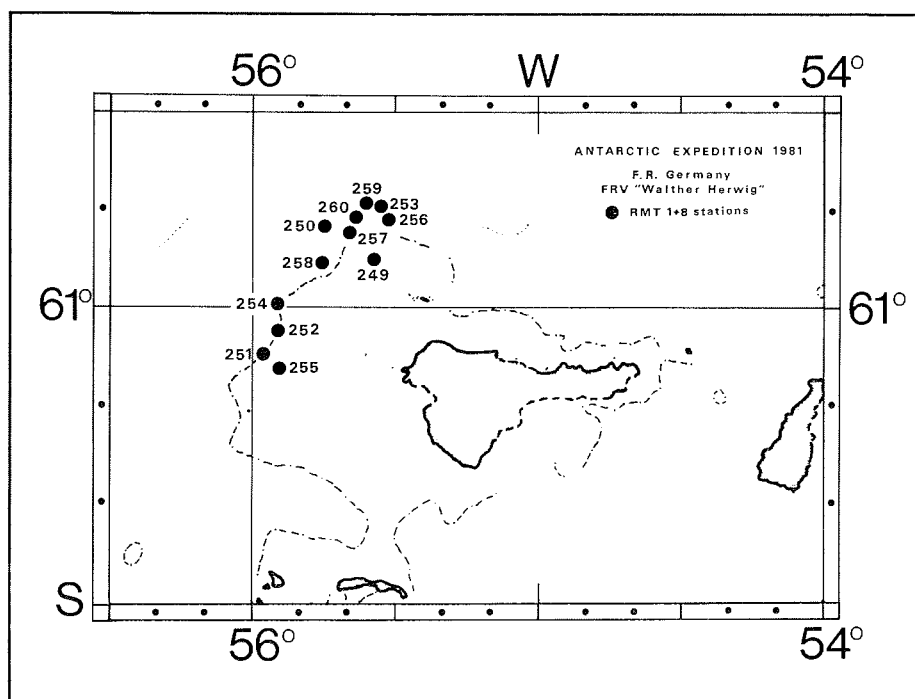


Fig. 4 Stations of zooplankton sampling near Elephant Island during second leg of FRV "WALTHER HERWIG"-cruise (10.Mar.-19.Mar.1981).

4.2. Notes on station list

Following abbreviations and terms are used in the station list:

NCN	: vertical net (= "Nansen-closing-net")
RMT 1	: smaller RMT net, mouth area $\sim 1 \text{ m}^2$
RMT 8	: bigger RMT net, mouth area $\sim 8 \text{ m}^2$
BGO	: Bongo-net
NCA	: net cage
Haul start	: GMT-time when net was opened
Haul duration	: space of time that net was filtering
Haul depth	: depth range where net was filtering
Catch volume	: on board measured displacement volume of the total catch
DA	: dawn, 8-12 GMT (twilight)
D	: day, 12-22 GMT (daylight)
DU	: dusk, 22- 2 GMT (twilight)
N	: night, 2- 8 GMT (darkness)
STD	: + station at which additionally physical oceanographic data were collected with a STD-recorder
Comment	: + additional notes are given to the station, see "Comments to stations"

Water depth and positions were recorded when haul was started.

Stat. Haul	Date 1981	Position	Water depth (m)	Net	start (GMT)	Haul dur. (min)	depth (m)	Filt. Vol. (m ³)	Catch Vol. (ml)	Day time	STD	Comment
8 1	26.01.	60°30.0'S 55°22.5'W	~3000	RMT1 RMT8	12:30	~45	135-0	not meas.	not meas.	D	-	+
10 2	26.01.	60°55.3'S 55°23.3'W	150	RMT1 RMT8	16:46	~35	125-0	not meas.	not meas.	D	-	+
11 3	26.01.	60°54.7'S 55°23.5'W	200	RMT1 RMT8	17:40	35	0-125-0	1060 20310	not meas.	D	-	+
19 4	30.01.	62°44.0'S 55°24.0'W	221	RMT1 RMT8	15:40	33	0-125-0	1171 22320	not meas.	D	+	-
25 5	31.01.	61°33.0'S 54°04.0'W	360	RMT1 RMT8	11:42	26	25-0	845 18610	not meas.	DA	-	+
27 6	31.01.	61°21.0'S 54°04.0'W	379	RMT1 RMT8	15:37	62	0-200-0	2203 41970	600 4500	D	-	+
28 7	31.01.	60°59.0'S 53°59.5'W	1000	RMT1 RMT8	19:28	32	80-0	1082 21650	600 10000	D	-	+
31 8	01.02.	60°06.0'S 54°04.0'W	2500	RMT1 RMT8	01:27	25	24-0	851 17600	310 3500	DU	-	+
33 9	01.02.	59°00.0'S 53°22.5'W	2000	RMT1 RMT8	11:16	18	25-0	555 11130	300 700	DA	-	-
34 10	01.02.	59°18.9'S 52°54.4'W	3600	RMT1 RMT8	15:37	47	0-188-0	1786 33640	900 500	D	-	+
38 11	02.02.	60°42.8'S 52°53.0'W	600	RMT1 RMT8	01:08	80	300-0	2920 56470	not meas.	DU	+	-

4.3. Station list

Stat. Haul	Date 1981	Position	Water depth (m)	Net	start (GMT)	Haul dur. (min)	depth (m)	Filt. Vol. (m ³)	Catch Vol. (ml)	Day time	STD	Comment
42 12	02.02.	62°11.0'S 52°39.3'W	1180	RMT1 RMT8	16:01	21	195-0	708 14600	130 1100	D	+	-
45 13	02.02.	62°03.1'S 52°00.8'W	2900	BGO1 BGO2	21:02	18	83-0	476 433	not meas.	D	-	+
47 14	03.02.	61°27.3'S 52°00.0'W	560	RMT1 RMT8	01:13	20	310-0	690 13720	450 1200	DJ	+	-
51 15	03.02.	59°28.0'S 51°51.0'W	~3000	RMT1 RMT8	17:54	15	190-0	534 10580	50 200	D	+	-
52 16	03.02.	59°04.4'S 51°57.3'W	~3500	RMT1 RMT8	21:12	17	210-0	602 11850	230 360	D	-	-
53 17	03.02.	58°57.0'S 51°56.8'W	~3000	RMT1 RMT8	22:38	15	190-0	438 9040	not meas.	DJ	-	-
54 18	03.02.	58°49.8'S 51°56.6'W	~3000	MHA	23:48	not meas.	0-300-0	not meas.	-	DJ	-	+
55 19	04.02.	58°41.0'S 51°58.0'W	~3800	RMT1 RMT8	01:35	35	50-0	943 20770	1400 9000	DJ	+	+
58 20	04.02.	57°50.0'S 50°43.0'W	~3000	RMT1 RMT8	11:11	17	200-0	623 12840	300 200	DA	-	-
59 21	04.02.	57°20.6'S 50°17.9'W	~3000	RMT1 RMT8	15:36	13	200-0	436 9590	100 15	D	+	-
61 22	05.02.	57°58.0'S 50°00.0'W	~3000	RMT1 RMT8	00:18	40	300-0	1423 29370	200 n.meas.	DJ	+	+

Stat. Haul	Date 1981	Position	Water depth (m)	Net	start (GMT)	Haul dur. (min)	depth (m)	Filt. Vol. (m ³)	Catch Vol. (ml)	Day time	STD	Comment
65 23	05.02.	59°33.0'S 50°02.0'W	~4000	RMT1 RMT8	11:13	17	200-0	601 12430	20 200	DA	-	-
67 24	05.02.	60°02.8'S 50°04.8'W	~2000	RMT1 RMT8	17:09	40	0-200-0	1465 27970	30 450	D	-	+
69 25	05.02.	60°58.0'S 50°01.0'W	~2000	RMT1 RMT8	23:46	23	300-0	823 17010	30 500	DU	-	-
73 26	06.02.	62°41.0'S 50°02.0'W	>3000	RMT1 RMT8	11:08	11	200-0	397 8240	25 130	DA	-	-
74 27	06.02.	63°16.0'S 50°02.3'W	1800	RMT1 RMT8	15:41	14	205-0	499 10340	30 100	D	+	-
75 28	06.02.	63°51.4'S 49°52.3'W	>2000	RMT1 RMT8	20:13	8	200-0	307 6380	40 90	D	-	-
76 29	06.02.	63°54.2'S 49°17.7'W	>3000	RMT1 RMT8	22:30	13	30-0	454 9520	6000 32000	DU	-	+
77 30	07.02.	63°58.0'S 48°41.8'W	>3000	RMT1 RMT8	00:52	31	300-0	1075 22200	100 400	DU	+	+
81 31	07.02.	62°14.9'S 48°39.8'W	1800	RMT1 RMT8	15:44	11	200-0	385 7990	25 50	D	+	-
82 32	07.02.	61°40.8'S 48°43.3'W	>3000	RMT1 RMT8	19:43	14	200-0	493 10210	25 50	D	-	-
83 33	08.02.	60°57.9'S 48°42.5'W	>2000	RMT1 RMT8	00:44	13	200-0	455 9390	20 80	DU	+	-

Stat. Haul	Date 1981	Position	Water depth (m)	Net	start dur. (min)	Haul dur. (min)	depth (m)	Filt. Vol. (m ³)	Catch Vol. (ml)	Day time	STD	Comment
88 34	08.02.	59°26.0'S 48°42.0'W	>3000	RMT1 RMT8	11:12	9	200-0	320 6610	60 40	DA	-	+
89 35	08.02.	59°18.0'S 48°41.0'W	>3000	RMT1 RMT8	12:40	12	30-0	402 9010	35 500	D	-	+
90 36	08.02.	58°59.8'S 48°41.0'W	>3000	RMT1 RMT8	15:54	12	225-0	412 8250	180 300	D	+	-
91 37	08.02.	58°36.4'S 48°41.8'W	>2000	RMT1 RMT8	19:03	18	190-0	675 13800	200 30	D	-	+
91 38	08.02.	58°34.4'S 48°44.9'W	~3900	NCN	20:48	81	2000-0	769	not meas.	D	-	-
94 39	09.02.	57°01.0'S 49°27.0'W	~4000	RMT1 RMT8	11:57	20	250-0	744 16370	150 25	D	+	-
95 40	09.02.	57°30.6'S 49°24.0'W	3940	RMT1 RMT8	15:36	11	200-0	409 8090	65 50	D	+	-
97 41	09.02.	58°14.8'S 49°14.6'W	>3000	RMT1 RMT8	21:29	14	200-0	510 10640	125 30	D	-	-
98 42	10.02.	58°47.0'S 49°19.0'W	>3000	RMT1 RMT8	01:19	25	310-0	908 18450	500 2800	DU	+	+
103 43	11.02.	61°02.0'S 49°24.0'W	>2800	RMT1 RMT8	00:47	13	16-0	458 9800	20 800	DU	+	+
107 44	11.02.	62°58.9'S 49°24.0'W	~2000	RMT1 RMT8	15:59	17	200-0	601 12430	25 100	D	+	-

Stat. Haul	Date 1981	Position	Water depth (m)	Net	start (GMT)	Haul dur. (min)	depth (m)	Filt. Vol. (m ³)	Catch Vol. (ml)	Day time	STD	Comment
108 45	11.02.	63°23.5'S 49°26.3'W	>2500	RMT1 RMT8	19:38	13	26-0	435 8710	170 180	D	-	+
110 46	12.02.	63°53.0'S 50°04.0'W	>2000	RMT1 RMT8	00:36	13	20-0	544 8430	not meas.	DJ	+	+
115 47	12.02.	62°31.0'S 50°26.0'W	>2500	RMT1 RMT8	12:29	10	16-0	286 9220	200 220	D	-	+
116 48	12.02.	62°09.4'S 50°28.1'W	3500	RMT1 RMT8	15:55	19	200-0	711 15520	25 90	D	+	-
118 49	12.02.	61°12.0'S 50°24.0'W	3500	RMT1 RMT8	23:02	31	27-0	877 22130	50 2500	DJ	-	+
123 50	13.02.	58°49.3'S 50°26.5'W	2700	RMT1 RMT8	15:56	19	200-0	672 14110	100 20	D	+	-
125 51	14.02.	58°01.0'S 51°11.0'W	2650	RMT1 RMT8	00:52	16	200-0	527 10530	1200 5000	DJ	+	+
128 52	14.02.	60°00.9'S 51°20.1'W	3350	RMT1 RMT8	15:58	9	200-0	319 7050	<10 10	D	+	-
130 53	14.02.	60°27.2'S 51°20.0'W	3350	RMT1 RMT8	19:08	17	22-0	516 11530	<10 <10	D	-	+
131 54	15.02.	61°18.0'S 51°20.0'W	2400	RMT1 RMT8	00:54	17	195-0	601 13340	30 150	DJ	+	-
134 55	15.02.	62°38.4'S 51°19.0'W	~2000	RMT1 RMT8	10:08	18	26-0	606 14880	200 6000	DA	-	+

Stat. Haul	Date 1981	Position	Water depth (m)	Net	start (GMT)	Haul dur. (min)	depth (m)	Filt. Vol. (m ³)	Catch Vol. (ml)	Day time	STD	Comment
136 56	15.02.	62°50.0'S 51°21.0'W	1000	RMT1 RMT8	14:00	17	18-0	595 10440	20 200	D	+	+
137 57	15.02.	62°56.7'S 51°29.3'W	611	RMT1 RMT8	15:50	17	250-0	597 12550	40 300	D	+	+
138 58	15.02.	62°50.0'S 52°03.8'W	~3000	RMT1 RMT8	20:13	18	61-0	687 11130	500 6000	D	-	+
140 59	16.02.	62°41.0'S 52°39.5'W	~3000	RMT1 RMT8	00:51	18	200-0	651 13870	25 190	DU	-	-
144 60	16.02.	60°32.4'S 52°39.7'W	850	RMT1 RMT8	15:58	12	200-0	367 9540	5 60	D	+	-
146 61	16.02.	59°20.0'S 52°40.0'W	~3000	RMT1 RMT8	23:51	21	46-0	803 14800	1000 5000	DU	-	+
147 62	17.02.	59°16.0'S 52°40.0'W	> 3000	RMT1 RMT8	01:17	16	200-0	559 12020	700 5000	DU	-	-
151 63	17.02.	60°17.7'S 53°33.7'W	2200	RMT1 RMT8	16:01	17	175-0	552 10970	10 70	DU	+	-
153 64	17.02.	61°06.6'S 53°33.2'W	550	RMT1 RMT8	21:21	29	51-0	959 20910	5 20	D	-	-
154 65	18.02.	61°31.0'S 53°34.0'W	800	RMT1 RMT8	00:43	20	210-0	710 14020	185 1500	DU	-	+
157 66	18.02.	62°51.7'S 53°32.3'W	300	RMT1 RMT8	10:14	11	200-0	401 8170	<10 60	DA	-	-

Stat. Haul	Date 1981	Position	Water depth (m)	Net	Haul start (GMT)	Haul dur. (min)	depth (m)	Filt. Vol. (m ³)	Catch Vol. (ml)	Day time	STD	Comment
159 67	18.02.	62°45.0'S 54°17.6'W	252	RMT1 RMT8	15:43	15	200-0	485 10930	25 1100	D	+	+
160 68	18.02.	63°14.0'S 54°36.9'W	124	RMT1 RMT8	19:27	18	124-0	517 10710	not meas.	D	-	+
162 69	18.02.	63°18.2'S 54°54.1'W	78	RMT1 RMT8	21:34	16	63-0	547 13290	35 320	D	-	-
167 70	19.02.	61°01.0'S 54°53.0'W	253	RMT1 RMT8	15:57	11	210-0	415 8340	150 4000	D	+	+
169 71	20.02.	59°43.0'S 54°52.0'W	4000	RMT1 RMT8	00:48	23	200-0	851 17020	400 1100	DU	+	+
173 72	20.02.	60°14.4'S 55°11.4'W	3500	RMT1 RMT8	15:51	18	200-0	662 13510	200 90	D	+	-
175 73	21.02.	61°19.9'S 55°30.0'W	123	RMT1 RMT8	00:45	-	-	-	-	DU	-	+
178 74	21.02.	63°04.0'S 55°08.0'W	200	RMT1 RMT8	13:01	16	200-0	626 13930	15 100	D	-	-
191 75	23.02.	60°59.0'S 55°38.7'W	46	NCN	18:10	5	46-0	18	not meas.	D	+	-
193 76	23.02.	60°56.5'S 55°12.4'W	370	RMT1 RMT8	21:20	15	50-0	488 10060	100 n.meas.	D	-	+
194 77	23.02.	60°56.5'S 55°12.5'W	375	RMT1 RMT8	21:54	13	60-0	477 9480	250 5000	DU	-	+

Stat. Haul	Date 1981	Position	Water depth (m)	Net	start (GMT)	Haul dur. (min)	depth (m)	Filt. Vol. (m ³)	Catch Vol. (ml)	Day time	STD	Comment
196 78	25.02.	60°56.8'S 54°47.2'W	500	RMT1 RMT8	09:24	8	26-0	266 5700	<10 2000	DA	-	+
197 79	25.02.	60°56.7'S 54°46.0'W	500	RMT1 RMT8	09:46	12	0-24-0	545 11530	10 2000	DA	-	+
198 80	25.02.	60°55.6'S 54°44.8'W	500	RMT1 RMT8	10:23	23	0-45-0	not meas.	200 12000	DA	-	+
199 81	25.02.	61°12.0'S 54°58.7'W	30	NCA	12:00	360	surface	-	-	D	-	+
203 82	26.02.	60°56.1'S 54°53.8'W	755	RMT1 RMT8	22:05	21	0-30-0	670 13510	10 250	DU	-	+
204 83	26.02.	60°56.0'S 54°53.8'W	800	RMT1 RMT8	23:03	22	0-32-0	611 12260	300 5000	DU	-	+
205 84	27.02.	60°54.0'S 54°49.8'W	200	RMT1 RMT8	09:32	13	200-0	444 9320	40 200	DA	+	-
207 85	27.02.	60°56.0'S 54°52.0'W	700	RMT1 RMT8	12:02	5	30-0	195 3390	100 1000	D	+	+
208 86	27.02.	60°57.3'S 54°54.8'W	700	RMT1 RMT8	13:05	14	38-0	470 9080	150 7000	D	+	+
210 87	27.02.	60°56.8'S 54°56.3'W	750	MHA1 MHA2 MHA3 MHA4 MHA5 MHA6	21:32 21:37 21:42 21:47 21:52 21:57	5 5 5 5 5 5	0-40-23 ~23 ~23 ~23 ~23 23- 0	not meas. not meas.	not meas. not meas.	DU	+	+

Stat. Haul	Date 1981	Position	Water depth (m)	Net	start dur. (min)	Haul depth (m)	Filt. Vol. (m ³)	Catch Vol. (ml)	Day time	STD	Comment
210 88	27.02.	60°57.0'S 54°53.0'W	720	MHA1 MHA2 MHA3 MHA4 MHA5 MHA6	23:04 23:09 23:14 23:19 23:24 23:29	46-0 46-0 46-0 46-0 46-0 46-0	not meas.	not meas.	DU	+	+
210 89	28.02.	60°56.0'S 54°56.0'W	740	RMT1 RMT8	00:12 27	23-0	879 19290	1500 52000	DU	+	+
211 90	28.02.	60°56.8'S 54°56.0'W	200	RMT1 RMT8	09:42 13	200-0	463 9590	150 450	DA	+	-
216 91	01.03.	61°01.2'S 55°00.0'W	350	RMT1 RMT8	15:47 12	55-0	474 8470	250 5000	D	-	+
END OF FIBEX											
219 1	10.03.	60°16.8'S 66°42.5'W	>4000	RMT1 RMT8	19:07 8	140-0	277 5760	40 60	D	+	-
220 2	11.03.	62°09.0'S 67°30.4'W	3700	RMT1 RMT8	07:18 7	140-0	265 5520	50 100	N	+	+
221 3	11.03.	62°38.9'S 66°56.3'W	3500	RMT1 RMT8	11:25 8	140-0	257 5960	200 200	D	+	-
222 4	11.03.	62°59.5'S 66°30.0'W	3500	RMT1 RMT8	14:30 9	140-0	309 6020	80 150	D	+	-
223 5	11.03.	63°30.0'S 66°00.0'W	2700	RMT1 RMT8	17:08 11	140-0	374 7790	20 50	D	+	-

Stat. Haul	Date 1981	Position	Water depth (m)	Net	Haul start dur. (min) (GMT)	Haul dur. depth (m)	Filt. Vol. (m ³)	Catch Vol. (ml)	Day time	STD	Comment
224 6	11.03.	63°49.9'S 65°29.6'W	410	RMT1 RMT8	19:48	11	380 7900	150 50	D	+	-
225 7	11.03.	64°04.8'S 65°09.5'W	504	RMT1 RMT8	21:55	15	571 12940	100 270	D	+	-
226 8	12.03.	64°28.9'S 64°45.0'W	242	RMT1 RMT8	07:17	7	260 6530	50 230	N	+	+
227 9	12.03.	64°54.7'S 64°41.7'W	540	RMT1 RMT8	10:06	16	530 11680	150 600	DA	+	-
228 10	12.03.	64°54.2'S 63°42.7'W	508	RMT1 RMT8	13:18	12	411 9020	30 60	D	+	+
229 11	12.03.	64°53.0'S 63°16.0'W	331	RMT1 RMT8	15:31	29	966 20700	120 100	D	+	-
230 12	12.03.	64°38.0'S 62°52.0'W	530	RMT1 RMT8	17:20	29	928 17460	500 7500	D	+	+
232 14	12.03.	64°17.0'S 61°41.0'W	802	RMT1 RMT8	22:57	27	1062 17570	120 1800	DU	+	+
233 15	13.03.	63°44.5'S 61°19.0'W	920	RMT1 RMT8	07:04	16	551 11780	800 30000	N	+	+
234 16	13.03.	63°20.0'S 61°30.0'W	1000	RMT1 RMT8	09:40	9	314 6220	30 200	DA	+	-
235 17	13.03.	63°05.8'S 61°44.9'W	892	RMT1 RMT8	11:31	18	545 12360	40 100	D	+	+

Stat. Haul	Date 1981	Position	Water depth (m)	Net	start dur. (min)	Haul depth (m)	Filt. Vol. (m ³)	Catch Vol. (ml)	Day time	STD	Comment
236 18	13.03.	62°40.1'S 62°00.2'W	622	RMT1 RMT8	14:32	6	193 3760	30 50	D	-	-
238 21	13.03.	62°47.0'S 60°47.0'W	182	RMT1 RMT8	19:10	25	788 17070	n.meas. 7000	D	-	+
239 22	13.03.	62°54.0'S 60°20.0'W	810	RMT1 RMT8	21:09	25	746 17840	10 100	D	+	-
240 23	15.03.	62°17.0'S 58°20.0'W	702	RMT1 RMT8	11:03	6	211 4400	20 100	D	-	-
241 24	15.03.	62°24.1'S 57°47.0'W	1300	RMT1 RMT8	13:36	20	718 14645	30 150	D	+	-
242 25	15.03.	62°55.0'S 57°44.0'W	200	RMT1 RMT8	17:11	10	349 7240	<5 200	D	+	-
244 26	15.03.	63°08.4'S 57°39.6'W	103	RMT1 RMT8	20:05	8	270 5560	10 50	D	+	+
245 27	15.03.	63°05.8'S 57°08.3'W	645	RMT1 RMT8	21:39	10	350 7300	10 50	D	+	-
246 28	16.03.	62°30.0'S 57°01.8'W	924	RMT1 RMT8	11:00	10	350 7300	20 40	D	+	-
247 29	16.03.	62°13.0'S 57°01.0'W	1000	RMT1 RMT8	13:45	10	371 7430	20 200	D	-	-
248 30	16.03.	61°39.6'S 57°35.5'W	408	RMT1 RMT8	18:33	23	731 14730	30 200	D	+	-

Stat. Haul	Date 1981	Position	Water depth (m)	Net	Haul start time (GMT)	Haul dur. (min)	depth (m)	Filt. Vol. (m ³)	Catch Vol. (ml)	Day time	STD	Comment
249 31	17.03.	60°56.0'S 55°35.0'W	100	RMT1 RMT8	08:40	4	85-0	162 3180	40 200	N	-	+
250 32	17.03.	60°52.0'S 55°44.1'W	224	RMT1 RMT8	11:43	9	140-0	318 6240	10 500	D	+	+
251 33	17.03.	61°05.5'S 55°58.5'W	149	RMT1 RMT8	15:35	13	145-0	362 7210	120 200	D	+	-
252 34	17.03.	61°02.0'S 55°53.5'W	138	RMT1 RMT8	17:48	6	125-0	216 4330	30 200	D	+	-
253 35	18.03.	60°50.0'S 55°34.0'W	259	RMT1 RMT8	09:33	12	120-0	423 8300	150 500	DA	+	-
254 36	18.03.	60°59.5'S 55°55.0'W	224	RMT1 RMT8	11:51	8	135-0	294 6100	100 1100	D	+	+
255 37	18.03.	61°06.0'S 55°54.0'W	120	RMT1 RMT8	15:05	5	95-0	169 3480	<10 50	D	+	-
256 38	18.03.	60°50.8'S 55°32.4'W	310	RMT1 RMT8	18:18	7	140-0	242 4920	10 -	D	+	-
257 39	19.03.	60°52.6'S 55°40.3'W	156	RMT1 RMT8	10:06	5	130-0	186 3930	30 500	DA	+	-
258 40	19.03.	60°56.7'S 55°45.5'W	190	RMT1 RMT8	12:33	17	55-0	664 12010	40 150	D	+	+
259 41	19.03.	60°50.3'S 55°35.6'W	486	RMT1 RMT8	16:07	6	140-0	212 4300	30 60	D	+	-
260 42	19.03.	60°51.3'S 55°39.0'W	223	RMT1 RMT8	19:47	5	130-0	176 3880	<5 80	D	+	+

4.4. Comments to stations

8/ 1 nets not opened, error in transmission, test haul,
no catch preserved
10/ 2 nets not opened, error in transmission, test haul,
no catch preserved
11/ 3 double oblique haul
25/ 5 when nets were veered 2 m long hole torn in the
RMT 8
27/ 6 double oblique haul, RMT 8: subsample 2000 ml
28/ 7 RMT 8: subsample 2000 ml
31/ 8 net monitor defect, RMT 8: subsample 2000 ml
34/10 double oblique haul, RMT 1: large numbers
(~1000 ml) of krill larvae
45/13 icebergs in ~2 nm distance
54/18 nets not opened, error in electronical equipment
55/19 RMT 1: subsample 250 ml, RMT 8: subsample 2000 ml
61/22 RMT 8 sample: one big medusa, no quantitative sample
measuring possible
67/24 double oblique haul
76/29 RMT 1: subsample 1000 ml, RMT 8: subsample 1000 ml
77/30 RMT 8: 10 myctophids sorted from the catch and
deep-frozen
88/34 RMT 8 sample completely to Institute of Biochemistry
and Technology, Hamburg
89/35 RMT 1: large quantities of phytoplankton, "clog-
ging"
91/37 RMT 1: subsample 100 ml
98/42 RMT 8: 32 myctophids sorted from the sample and
deep-frozen
103/43 krill echo sounder shows strong signals in 10-20 m
water depth, identification haul
108/45 echo sounder shows heavy concentrations in 10-20 m
water depth
110/46 large quantities of phytoplankton, 12 big cteno-
phores sorted from RMT 8 sample
115/47 icebergs in ~2 nm distance
118/49 RMT 8: subsample 1500 ml, completely to Institute of
Biochemistry and Technology, Hamburg
125/51 RMT 8: subsample 1800 ml, 13 myctophids sorted from
RMT 8 sample and deep-frozen
130/53 bad weather conditions during the haul, nets badly
damaged
134/55 RMT 8: subsample 2000 ml
136/56 identification haul
137/57 difficult ice conditions, nets badly damaged after
haul
138/58 RMT 8: subsample 2000 ml
146/61 RMT 8: subsample 2000 ml
154/65 RMT 8: 4 myctophids sorted from sample and deep-
frozen
159/67 haul close to sea ice edge
160/68 haul very close to sea floor: many benthic specimens
in the samples
167/70 about 20 Soviet krill trawlers operating in the
vicinity of the station, RMT 8: subsample 2000 ml

169/71 RMT 8: 13 myctophids and 1 snake mackerel (Paradi-
plosspinus sp.) sorted from the sample and deep-
frozen
 175/73 error in transmission, nets not opened: no catch
 193/76 RMT 8: total catch used for net cage experiment, no
subsample preserved
 194/77 see 193/76
 196/78 see 193/76
 197/79 see 193/76
 198/80 see 193/76
 199/81 net cage experiment: echo marks calibrated with
defined numbers of Euphausia superba inside the
cage
 203/82 identification haul during "krill patch study"
 204/83 identification haul during "krill patch study",
RMT 8: subsample 2000 ml
 207/85 see 203/82
 208/86 identification haul during "krill patch study",
RMT 8: subsample 2000 ml
 210/87 fast identification haul with "MESSHAI" during
"krill patch study"
 210/88 see 210/87
 210/89 RMT 8: subsample 2000 ml
 216/91 last haul during "krill patch study"
 220/ 2 error in transmission , no EPC recordings possible
during RMT-haul
 226/ 8 1 myctophid removed from RMT 8 sample and deep-
frozen
 228/10 during retrieval of the net ice floes damage RMT 8
net
 230/12 RMT 8: subsample 1500 ml
 232/14 RMT 8: subsample 900 ml
 233/15 RMT 8: subsample 2000 ml
 235/17 sample not quantitative: long tears in RMT 8 net
 238/21 RMT 8: subsample 1500 ml
 244/26 after the haul weight bar of RMT damaged
 249/31 Soviet trawlers operating near the station
 250/32 see 249/31
 254/36 see 249/31
 258/40 see 249/31
 260/42 bad weather conditions during the haul, basket of
RMT 1 liner torn during the haul

5. "METEOR"-cruise

5.1. Station charts

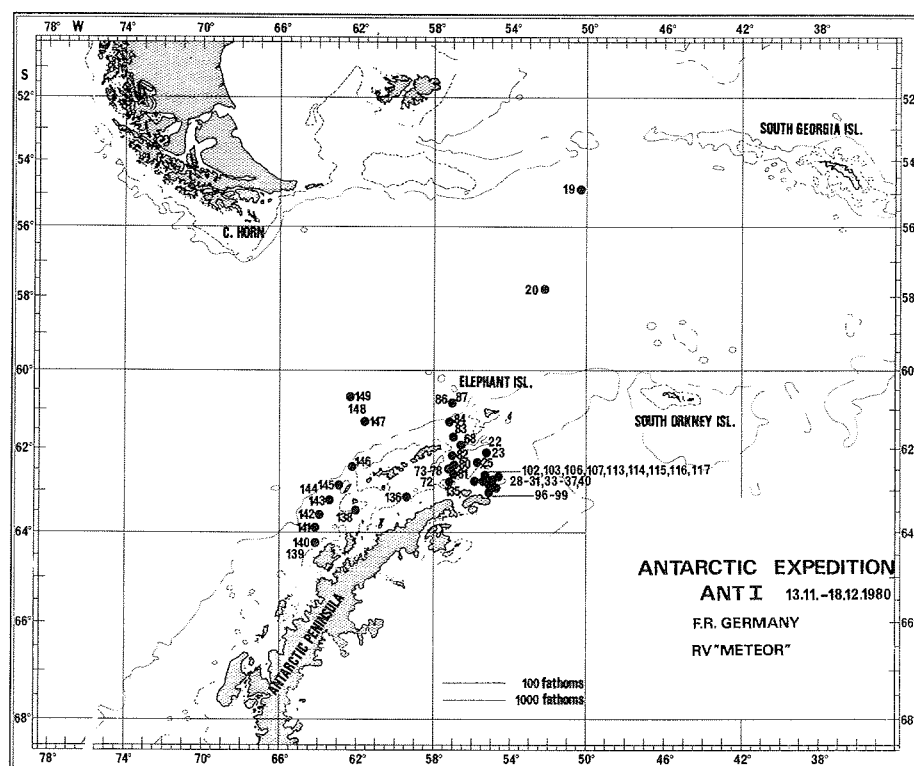


Fig. 5 Stations of zooplankton sampling during ANT I of RV "METEOR"-cruise (13.Nov.-18.Dec.1980).

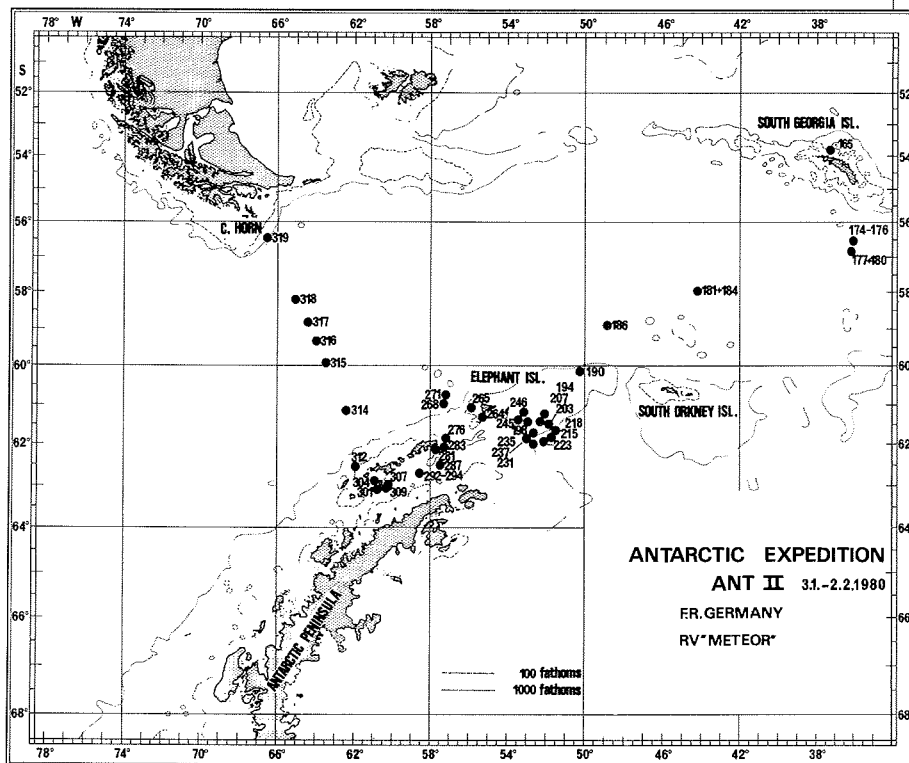


Fig. 6 Stations of zooplankton sampling during ANT II of RV "METEOR"-cruise (3. Jan. - 2. Feb. 1981).

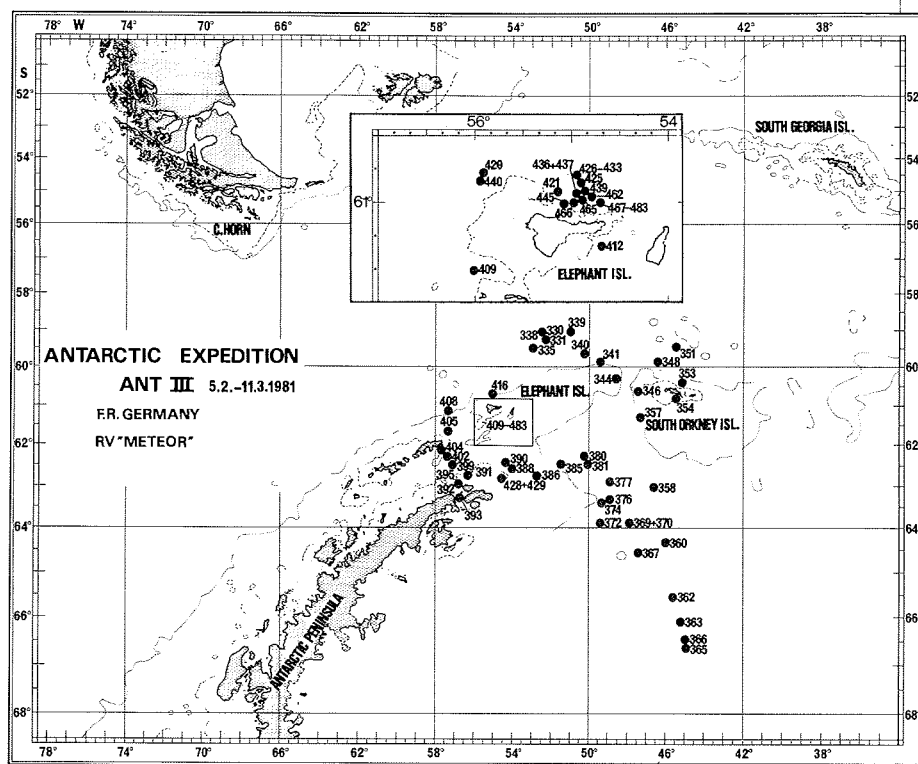


Fig. 7 Stations of zooplankton sampling during ANT III of RV "METEOR"-cruise (5.Feb.-10.Mar.1981).

5.2. Notes on station list

Following abbreviations and terms are used in the station list:

WP 2	: Working Party 2-net
NCN	: vertical net (= "Nansen-closing-net")
RMT 1	: smaller RMT net, mouth area $\sim 1 \text{ m}^2$
RMT 8	: bigger RMT net, mouth area $\sim 8 \text{ m}^2$
MOC 1	
to MOC 9	: various nets of the MOCNESS
Haul start	: GMT-time when net was opened
Haul duration	: space of time that net was filtering
Haul depth	: depth range where net was filtering

Sunrise and sunset were determined for haul position.

Temperature of air and water were measured at the beginning of the haul, the water temperature was measured at the surface.

Comment : + additional notes are given to the station,
see "Comments to stations"

5.3. Station list

Stat. Haul	Date 1980	Position	Water depth (m)	Net	start dur. (GMT)	Haul dur. (min)	depth (m)	Filt. Vol. (m ³)	Sun- rise (GMT)	Sun- set (GMT)	Temp. Air (°C)	Temp. Water (°C)	Comment
19 1	20.11.	54°37.3'S 50°11.1'W	4005	WP2	18:00	11	500-	0	142	-	-	-	-
20 1	21.11.	57°46.5'S 52°06.1'W	4127	NCN	18:00	2	80-	0	23	-	-	-	-
22 2	23.11.	62°04.1'S 55°20.0'W	1235	WP2	13:00	3	150-	50	28	6:32	00:41	-	-
22 3	23.11.	62°04.1'S 55°20.0'W	1235	WP2	13:20	2	50-	0	14	6:32	00:41	-	-
23 2	23.11.	62°15.1'S 55°16.4'W	365	NCN	13:30	1	50-	0	14	6:32	00:41	-	-
23 3	23.11.	62°15.1'S 55°16.4'W	365	NCN	13:40	2	150-	50	28	6:32	00:41	-	-
23 4	23.11.	62°15.1'S 55°16.4'W	365	NCN	18:00	3	300-	150	43	6:32	00:41	-	+
23 1	23.11.	62°15.1'S 55°17.2'W	356	RMT1 RMT8	18:33	24	190-	0	1057 13621	6:32	00:41	-3.4	-1.6
25 5	24.11.	62°22.5'S 55°43.2'W	286	NCN	17:00	3	150-	50	28	6:30	00:46	-	-
25 6	24.11.	62°22.5'S 55°43.2'W	286	NCN	18:00	1	50-	0	14	6:30	00:46	-	-
25 2	24.11.	62°22.3'S 55°41.3'W	240	RMT1 RMT8	18:49	47	205-	0	1595 33192	6:30	00:46	-4.4	-1.7

Stat. Haul	Date 1980	Position	Water depth (m)	Net	start (GMT)	Haul dur. (min)	depth (m)	Filt. Vol. (m ³)	Sun- rise (GMT)	Sun- set (GMT)	Temp. Air (°C)	Temp. Water (°C)	Comment
28 7	25.11.	62°53.0'S 54°47.0'W	206	NCN	18:00	3	150- 50	28	6:19	00:51	-	-	-
28 8	25.11.	62°53.0'S 54°47.0'W	206	NCN	18:10	1	198- 150	14	6:19	00:51	-	-	-
28 9	25.11.	62°53.0'S 54°47.0'W	206	NCN	18:15	1	50- 0	14	6:19	00:51	-	-	-
29 10	25.11.	62°52.1'S 54°47.2'W	205	NCN	19:20	2	195- 150	13	6:19	00:51	-5.9	-1.7	-
29 11	25.11.	62°52.2'S 54°47.3'W	205	NCN	19:40	1	195- 150	13	6:19	00:51	-5.9	-1.7	-
30 12	26.11.	62°48.0'S 54°47.0'W	174	NCN	08:00	3	150- 0	43	6:18	00:51	-	-	-
30 13	26.11.	62°48.0'S 54°47.0'W	174	NCN	08:10	1	50- 0	14	6:18	00:51	-	-	-
31 14	26.11.	62°45.0'S 54°41.0'W	135	NCN	13:20	2	50- 0	14	6:18	00:51	-	-	-
31 15	26.11.	62°44.3'S 54°41.4'W	134	NCN	13:30	2	132- 80	15	6:18	00:51	-5.5	-1.8	-
31 16	26.11.	62°44.2'S 54°41.4'W	134	NCN	13:40	2	132- 80	15	6:18	00:51	-6.4	-1.7	-
33 17	26.11.	62°40.4'S 54°44.4'W	183	NCN	19:30	2	50- 0	14	6:18	00:51	-	-	-

Stat. Haul	Date 1980	Position	Water depth (m)	Net	start (GMT)	Haul dur. (min)	depth (m)	Filt. Vol. (m ³)	Sun- rise (GMT)	Sun- set (GMT)	Temp. Air (°C)	Temp. Water (°C)	Comment
33 18	26.11.	62°40.4'S 54°44.4'W	183	NCN	19:40	2	90-	0	26	6:18	00:51	-	-
33 19	26.11.	62°40.4'S 54°44.4'W	183	NCN	19:55	2	150-	50	28	6:18	00:51	-	-
34 20	26.11.	62°40.4'S 54°44.4'W	315	NCN	23:30	2	50-	0	14	6:18	00:51	-	-
34 21	26.11.	62°40.4'S 54°44.4'W	315	NCN	23:40	3	150-	50	28	6:18	00:51	-	-
34 22	26.11.	62°40.4'S 54°44.4'W	315	NCN	23:55	4	250-	50	57	6:18	00:51	-	-
35 23	27.11.	62°47.2'S 54°51.1'W	181	NCN	11:58	4	175-	70	30	6:16	00:55	-6.4	-1.7
35 24	27.11.	62°46.5'S 54°50.5'W	184	NCN	12:17	3	175-	70	30	6:16	00:55	-6.3	-1.7
35 25	27.11.	62°46.4'S 54°50.4'W	173	NCN	12:30	2	70-	0	20	6:16	00:55	-6.1	-1.7
36 3	27.11.	62°44.5'S 54°55.5'W	180	RMT1 RMT8	13:31	48	170-	0	1653 32210	6:16	00:55	-6.3	-1.7
37 26	27.11.	62°45.1'S 54°55.1'W	180	NCN	17:30	1	50-	0	14	6:16	00:55	-	-
37 27	27.11.	62°45.1'S 54°55.1'W	180	NCN	17:40	2	150-	50	28	6:16	00:55	-	-

Stat. Haul	Date 1980	Position	Water depth (m)	Net	start (GMT)	Haul dur. (min)	depth (m)	Filt. Vol. (m ³)	Sun- rise (GMT)	Sun- set (GMT)	Temp. Air Water (°C)	Comment
37 28	27.11.	62°45.1'S 54°55.1'W	190	NCN	17:50	2	190- 150	11	6:16	00:55	- -	-
40 29	28.11.	62°46.3'S 54°44.2'W	152	NCN	12:30	1	50- 0	14	-	-	- -	-
40 30	28.11.	62°46.3'S 54°44.2'W	152	NCN	12:45	2	150- 50	28	-	-	- -	-
40 31	28.11.	62°46.3'S 54°44.2'W	152	NCN	13:00	3	150- 0	43	-	-	- -	-
68 32	29.11.	62°04.4'S 56°31.4'W	1521	NCN	18:30	8	500- 150	99	6:26	00:58	- -	-
68 33	29.11.	62°04.4'S 56°31.4'W	1521	NCN	18:50	3	150- 50	28	6:26	00:58	- -	-
68 4	29.11.	62°04.3'S 56°30.5'W	1350	RMT1 RMT8	20:17	47	200- 0	1742 30376	6:26	00:58	-2.3 -1.1	+
72 34	30.11.	62°30.5'S 57°08.1'W	1022	NCN	11:30	2	150- 50	28	-	-	- -	-
72 35	30.11.	62°30.5'S 57°08.1'W	1022	NCN	11:40	7	500- 150	99	-	-	- -	-
73 36	30.11.	62°30.0'S 57°04.5'W	950	NCN	17:30	2	150- 50	28	-	-	- -	-
73 37	30.11.	62°30.0'S 57°04.5'W	950	NCN	18:00	8	500- 150	99	-	-	- -	-

Stat. Haul	Date 1980	Position	Water depth (m)	Net	start (GMT)	Haul dur. (min)	depth (m)	Filt. Vol. (m ³)	Sun- rise (GMT)	Sun- set (GMT)	Temp. Air (°C)	Temp. Water (°C)	Comment
74 38	30.11.	62°29.4'S 57°05.2'W	950	NCN	23:00	7	500-150	99	-	-	-	-	-
74 39	30.11.	62°29.4'S 57°05.2'W	950	NCN	23:20	2	150-50	28	-	-	-	-	-
74 40	30.11.	62°29.4'S 57°05.2'W	950	NCN	23:30	1	50-0	14	-	-	-	-	+
76 41	01.12.	62°29.5'S 57°05.2'W	932	NCN	13:30	10	500-100	113	-	-	-	-	-
76 42	01.12.	62°29.5'S 57°05.2'W	932	NCN	15:30	9	900-500	113	-	-	-	-	-
77 43	01.12.	62°29.5'S 57°03.0'W	910	NCN	15:30	7	500-150	99	-	-	-	-	+
77 44	01.12.	62°29.5'S 57°03.0'W	910	NCN	19:00	2	150-50	28	-	-	-	-	-
78 45	01.12.	62°29.3'S 57°02.0'W	913	NCN	23:30	8	500-150	99	-	-	-	-	-
78 46	01.12.	62°29.3'S 57°02.0'W	913	NCN	23:40	3	150-50	28	-	-	-	-	-
80 5	02.12.	62°29.4'S 57°02.2'W	900	RMT1 RMT8	01:24	132	603-0	4687 87082	6:17	01:12	-2.1	-1.5	+
81 6	02.12.	62°36.4'S 57°08.0'W	568	RMT1 RMT8	04:04	34	147-0	1162 23322	6:16	01:14	-2.6	-1.8	+

Stat. Haul	Date 1980	Position	Water depth (m)	Net	start dur. (GMT)	Haul dur. (min)	depth (m)	Filt. Vol. (m ³)	Sun- rise (GMT)	Sun- set (GMT)	Temp. Air (°C)	Temp. Water (°C)	Comment
82 7	02.12.	62°11.4'S 57°08.3'W	1860	RMT1 RMT8	07:05	36	142-	0 1351 23732	6:22	01:09	-2.7	-1.8	+
83 8	02.12.	61°45.1'S 57°07.5'W	403	RMT1 RMT8	10:16	39	140-	0 1356 26959	6:27	01:04	-3.3	-1.5	+
84 9	02.12.	61°21.2'S 57°07.2'W	1151	RMT1 RMT8	13:22	41	141-	0 1416 28051	6:31	00:59	-2.3	-1.2	+
86 47	02.12.	60°53.5'S 57°06.4'W	3648	■	22:30	4	200-	0 57	-	-	-	-	-
87 10	02.12.	60°53.2'S 57°05.2'W	4760	RMT1 RMT8	22:49	49	141-	0 1720 32420	6:36	00:54	-2.1	-0.3	+
96 48	06.12.	62°58.1'S 54°55.5'W	480	NCN	14:30	4	300- 150	43	-	-	-	-	-
96 49	06.12.	62°58.1'S 54°55.5'W	480	NCN	15:00	2	150- 50	28	-	-	-	-	-
96 50	06.12.	62°58.1'S 54°55.5'W	480	NCN	15:15	1	50- 0	14	-	-	-	-	-
97 51	06.12.	63°04.4'S 54°53.3'W	355	NCN	17:30	3	300- 150	43	-	-	-	-	-
97 52	06.12.	63°04.4'S 54°53.3'W	355	NCN	18:00	2	150- 50	28	-	-	-	-	-
97 53	06.12.	63°04.4'S 54°53.3'W	355	NCN	18:15	1	50- 0	14	-	-	-	-	-

Stat. Haul	Date 1980	Position	Water depth (m)	Net	start dur. (GMT)	Haul dur. (min)	depth (m)	Filt. Vol. (m ³)	Sun- rise (GMT)	Sun- set (GMT)	Temp. Air (°C)	Temp. Water (°C)	Comment
98 11	06.12.	62°58.3'S 54°56.0'W	410	RMT1 RMT8	19:01	33	142- 0	1183 21331	5:56	01:18	-2.0	-1.7	+
99 54	06.12.	63°01.3'S 54°57.3'W	400	NCN	23:50	3	300- 150	43	5:56	01:18	-	-	-
102 55	07.12.	62°42.2'S 55°14.5'W	190	NCN	17:00	2	150- 50	28	-	-	-	-	-
102 56	07.12.	62°42.2'S 55°14.5'W	190	NCN	17:10	2	50- 0	14	-	-	-	-	-
103 12	07.12.	62°43.5'S 55°13.2'W	231	RMT1 RMT8	17:15	34	152- 0	1203 22544	5:59	01:17	-2.8	-1.5	+
106 13	08.12.	62°44.2'S 55°11.4'W	185	RMT1 RMT8	11:04	88	167- 0	3037 59052	5:58	01:19	-1.4	-1.4	+
107 57	08.12.	62°42.2'S 55°14.1'W	171	NCN	17:00	3	150- 50	28	5:58	01:19	-1.4	-1.4	-
107 58	08.12	62°42.2'S 55°14.1'W	171	NCN	17:20	1	50- 0	14	5:58	01:19	-1.4	-1.4	-
113 59	09.12.	63°05.0'S 55°07.1'W	290	NCN	05:30	3	250- 150	28	-	-	-	-	-
113 60	09.12.	63°05.0'S 55°07.1'W	290	NCN	05:45	2	150- 50	28	-	-	-	-	-
113 61	09.12.	63°05.0'S 55°07.1'W	290	NCN	06:00	1	50- 0	14	-	-	-	-	-

Stat. Haul	Date 1980	Position	Water depth (m)	Net	start (GMT)	Haul dur. (min)	depth (m)	Filt. Vol. (m ³)	Sun- rise (GMT)	Sun- set (GMT)	Temp. Air (°C)	Temp. Water (°C)	Comment
114 62	09.12.	63°04.1'S 55°10.1'W	152	NCN	11:00	1	100- 50	14	-	-	-	-	-
114 63	09.12.	63°04.1'S 55°10.1'W	152	NCN	11:10	1	50- 0	14	-	-	-	-	-
116 64	09.12.	63°04.5'S 55°09.5'W	145	NCN	18:00	1	100- 50	14	-	-	-	-	-
116 65	09.12.	63°04.5'S 55°09.5'W	145	NCN	18:05	1	50- 0	14	-	-	-	-	-
117 66	09.12.	63°03.2'S 55°10.5'W	112	NCN	23:00	1	96- 50	13	-	-	-	-	-
117 67	09.12.	63°03.2'S 55°10.5'W	112	NCN	23:05	1	50- 0	14	-	-	-	-	-
135 14	11.12.	62°48.3'S 57°11.0'W	261	RMT1 RMT8	08:39	51	177- 0	1755 32929	6:02	01:32	-	-1.5	+
136 15	11.12.	63°09.2'S 59°16.5'W	858	RMT1 RMT8	13:49	29	55- 0	1218 17839	6:05	01:46	0.1	0.1	+
138 16	12.12.	63°31.2'S 62°02.1'W	170	RMT1 RMT8	04:09	48	140- 0	1686 31861	6:09	02:04	-1.5	-1.2	+
139 68	12.12.	64°16.1'S 64°08.4'W	655	NCN	17:00	3	300- 150	43	-	-	-	-	+
139 69	12.12.	64°16.1'S 64°08.4'W	655	NCN	17:10	11	500- 0	142	-	-	-	-	-

Stat. Haul	Date 1980	Position	Water depth (m)	Net	start (GMT)	Haul dur. (min)	depth (m)	Filt. Vol. (m ³)	Sun- rise (GMT)	Sun- set (GMT)	Temp. Air (°C)	Temp. Water (°C)	Comment	
139 70	12.12.	64°16.1'S 64°08.4'W	655	NCN	17:35	3	150-	0	43	-	-	-	-	
139 71	12.12.	64°16.1'S 64°08.4'W	655	NCN	17:50	1	50-	0	14	-	-	-	-	
140 17	12.12.	64°16.0'S 64°12.1'W	650	RMT1 RMT8	18:15	33	140-	0	1348 20425	6:04	02:27	-1.0	1.1	+
141 18	13.12.	63°58.2'S 64°15.0'W	390	RMT1 RMT8	01:25	32	143-	0	1332 20231	6:09	02:23	-1.9	-1.7	+
142 19	13.12.	63°37.2'S 64°01.5'W	235	RMT1 RMT8	05:03	36	144-	0	1246 24294	6:14	02:15	-2.4	-1.5	+
143 20	13.12.	63°15.2'S 63°27.2'W	500	RMT1 RMT8	12:33	35	163-	0	1232 23062	6:18	02:07	-1.0	-0.8	+
144 72	13.12.	63°05.3'S 63°20.5'W	456	NCN	18:30	10	400-	0	113	-	-	-	+	
144 73	13.12.	63°05.3'S 63°20.5'W	456	NCN	18:50	6	400-	150	71	-	-	-	-	
144 74	13.12.	63°05.3'S 63°20.5'W	456	NCN	19:10	2	150-	50	28	-	-	-	-	
145 21	13.12.	62°55.3'S 62°49.4'W	1150	RMT1 RMT8	20:00	49	143-	0	1694 33148	6:21	01:59	1.2	-0.7	+
146 22	14.12.	62°23.0'S 62°16.5'W	1600	RMT1 RMT8	01:02	28	144-	0	974 18708	6:26	01:50	-0.3	-0.8	+

Stat. Haul	Date 1980/81	Position	Water depth (m)	Net	start (GMT)	Haul dur. (min)	depth (m)	Filt. Vol. (m ³)	Sun- rise (GMT)	Sun- set (GMT)	Temp. Air (°C)	Temp. Water (°C)	Comment
147 23	14.12.	61°22.3'S 61°34.0'W	3775	RMT1 RMT8	09:04	35	190- 0	1319 22964	6:36	01:34	-0.9	-0.6	+
148 75	14.12.	60°43.4'S 62°15.5'W	3774	NCN	16:30	5	400- 150	71	-	-	-	-	-
148 76	14.12.	60°43.4'S 62°15.5'W	3774	NCN	16:45	3	150- 0	28	-	-	-	-	-
148 77	14.12.	60°43.4'S 62°15.5'W	3774	NCN	16:55	1	50- 0	14	-	-	-	-	+
149 24	14.12.	60°43.1'S 62°17.1'W	4248	RMT1 RMT8	17:17	28	141- 0	871 21354	6:47	01:29	2.4	0.7	+
END ANT I													
165 8	10.01.	53°52.0'S 37°24.3'W	285	NCN	15:42	5	280- 140	40	6:19	22:49	-	1.2	-
165 25	10.01.	53°52.0'S 37°27.0'W	285	RMT1 RMT8	17:58	11	140- 0	373 8299	6:19	22:49	-	1.3	+
174 175 176 9	13.01.	56°34.0'S 36°09.0'W	1700	NCN NCN NCN	16:15	15 7 5	2000-1000 1000- 500 500- 140	283 141 102	6:01	22:57	-	1.3	-
177 26	13.01.	56°38.3'S 36°08.0'W	3800	RMT1 RMT8	21:52	10	148- 0	338 6551	6:01	22:58	-	1.6	-
180 27	14.01.	56°38.3'S 36°08.0'W	3800	RMT1	00:40	16	150- 0	542	6:02	22:56	-	1.4	+

Stat. Haul	Date 1981	Position	Water depth (m)	Net	start dur. (min)	Haul dur. (min)	depth (m)	Filt. Vol. (m ³)	Sun- rise (GMT)	Sun- set (GMT)	Temp. Air (°C)	Temp. Water (°C)	Comment
181 28	16.01.	58°02.3'S 44°07.3'W	2760	RMT1 RMT8	01:28	16	143- 0	561 10208	6:28	23:35	-	1.6	+
184 10	16.01.	58°03.0'S 44°09.7'W	2770	NCN NCN NCN	05:21	17 8 5	2000-1000 1000-500 500-140	283 141 102	6:28	23:35	-	1.6	-
186 29	16.01.	58°54.5'S 48°45.1'W	3938	RMT1 RMT8	19:48	66	250- 0	2276 45045	6:40	24:00	-	2.1	+
190 30	17.01.	60°11.5'S 50°20.3'W	492	RMT1 RMT8	16:30	15	150- 0	528 10474	6:38	00:14	-	0.4	+
194 31	18.01.	61°20.2'S 52°04.2'W	546	RMT1 RMT8	11:56	14	151- 0	682 7797	6:37	00:29	-	0.3	+
198 32	18.01.	61°26.5'S 52°57.4'W	805	RMT1 RMT8	17:01	15	133- 0	524 10037	6:40	00:34	-	0.3	+
203 11	19.01.	61°31.0'S 51°54.0'W	1600	NCN NCN NCN	01:32	18 7 5	1500-1000 1000-500 500-140	141 141 102	6:37	00:28	-	0.2	-
207 12	19.01.	61°27.4'S 52°09.0'W	533	NCN	06:08	7	500- 140	102	6:39	00:29	-	0.3	-
215 13	19.01.	61°48.0'S 51°28.0'W	2840	NCN NCN NCN	22:26	20 9 8	2000-1000 1000-500 500-140	283 141 102	6:33	00:29	-	0.2	-
218 33	20.01.	61°44.5'S 51°31.4'W	2702	RMT1 RMT8	04:18	75	300- 0	2774 48804	6:36	00:27	-	0.0	+

Stat. Haul	Date 1981	Position	Water depth (m)	Net	start (GMT)	Haul dur. (min)	depth (m)	Filt. Vol. (m ³)	Sun- rise (GMT)	Sun- set (GMT)	Temp. Air Water (°C)	Comment
223 34	20.01.	61°56.4'S 52°02.1'W	2798	RMT1 RMT8	23:32	14	140- 0	1332 23407	6:36	00:30	- 0.0	+
231 35	22.01.	61°56.2'S 52°46.2'W	2149	RMT1 RMT8	16:15	16	150- 0	573 10563	6:44	00:28	- 0.8	+
235 36	22.01.	61°44.5'S 52°46.5'W	476	RMT1 RMT8	21:34	17	148- 0	587 11224	6:46	00:27	- 0.0	+
237 14	23.01.	61°51.2'S 52°49.5'W	1460	NCN NCN	02:55	9 7	1000- 500 500- 140	141 102	6:48	00:26	- 0.9	-
245 37	23.01.	61°27.0'S 53°20.0'W	580	RMT1 RMT8	22:38	25	142- 0	865 16324	6:53	00:24	- -	+
246 15	24.01.	61°19.5'S 53°21.2'W	832	NCN NCN	00:05	10 10	800- 500 500- 140	85 102	6:57	00:21	- 0.2	-
264 37	24.01.	61°20.0'S 55°03.2'W	800	RMT1 RMT8	22:04	42	145- 0	1548 27009	7:04	00:28	- 0.4	+
265 38	25.01.	61°06.1'S 56°05.5'W	230	RMT1 RMT8	03:22	51	140- 0	1887 33175	7:12	00:28	- 0.6	+
268 16	25.01.	60°54.1'S 57°05.1'W	3619	NCN NCN	05:50	17 13	1000- 500 500- 140	141 102	7:18	00:30	- 1.0	-
271 39	25.01.	60°53.3'S 57°02.4'W	3783	RMT1 RMT8	21:23	59	267- 0	2980 32766	7:18	00:30	- 2.9	+
276 40	26.01.	62°01.0'S 57°14.0'W	250	RMT1 RMT8	11:50	36	140- 0	1332 20438	7:12	00:37	- -	+

Stat. Haul	Date 1981	Position	Water depth (m)	Net	start (GMT)	Haul dur. (min)	depth (m)	Filt. Vol. (m ³)	Sun- rise (GMT)	Sun- set (GMT)	Temp. Air (°C)	Temp. Water (°C)	Comment
281 17	27.01.	62°16.2'S 57°40.1'W	1943	NCN NCN	01:50	17 13	1000- 500 500- 140	141 102	7:14	00:38	-	0.9	+
283 41	27.01.	62°15.3'S 57°41.0'W	1980	RMT1 RMT8	03:09	100	250- 0	3458 69393	7:14	00:38	-	0.6	+
287 43	28.01.	62°25.2'S 57°25.1'W	1400	RMT8	15:55	15	130- 0	9799	7:15	00:36	-	0.8	+
292 18	29.01.	62°44.2'S 58°32.4'W	1327	NCN NCN	01:36	15 9	1000- 500 500- 0	141 141	7:19	00:40	-	0.9	-
294 44	29.01.	62°44.1'S 58°31.5'W	1500	RMT1 RMT8	03:06	123	300- 0	4595 78091	7:19	00:40	-	0.9	+
301 45	29.01.	62°59.2'S 60°35.5'W	110	RMT1 RMT8	22:40	19	67- 0	640 13000	7:25	00:50	-	1.7	+
304 19	30.01.	62°58.1'S 60°38.1'W	167	NCN	00:04	6	150- 0	42	7:29	00:47	-	1.7	+
307 46	30.01.	63°02.1'S 60°27.1'W	500	RMT1 RMT8	02:29	41	158- 0	1470 27499	7:27	00:47	-	1.2	+
309 20	30.01.	63°03.3'S 60°31.4'W	450	NCN	04:00	8	440- 140	85	7:27	00:47	-	1.0	-
312 47	30.01.	62°28.5'S 61°55.1'W	229	RMT1 RMT8	18:26	21	150- 0	756 14487	7:38	00:48	-	1.0	+
314 48	31.01.	61°06.4'S 62°44.1'W	3600	RMT1 RMT8	03:16	75	255- 0	2870 47028	8:02	00:47	-	2.6	+

Stat. Haul	Date 1981	Position	Water depth (m)	Net	start (GMT)	Haul dur. (min)	depth (m)	Filt. Vol. (m ³)	Sun- rise (GMT)	Sun- set (GMT)	Temp. Air Water (°C)	Comment
315 49	31.01.	59°59.2'S 63°25.2'W	3850	RMT1 RMT8	11:26	24	140- 0	871 16784	8:04	00:34	- 2.8	+
316 50	31.01.	59°22.3'S 63°56.4'W	3900	RMT1 RMT8	16:34	28	140- 0	999 18472	8:09	00:33	- 4.1	-
317 51	31.01.	58°47.2'S 64°20.2'W	3700	RMT1 RMT8	21:35	33	143- 0	1184 21616	8:14	00:31	- 5.4	+
318 52	01.02.	58°10.4'S 64°59.0'W	3000	RMT1 RMT8	03:12	86	253- 0	4205 51703	8:21	00:30	- 5.9	-
319 53	01.02.	56°28.0'S 66°56.3'W	410	RMT1 RMT8	18:39	20	143- 0	730 13161	8:37	00:29	- 8.0	+
END ANT II												
330 1	09.02.	59°11.3'S 52°23.3'W	3042	MOC1 MOC2 MOC3 MOC4 MOC5 MOC6 MOC7 MOC8 MOC9	00:15	38 4 3 3 3 3 2 1 1	0- 400 400- 350 350- 300 300- 250 250- 200 200- 150 150- 100 100- 50 50- 0	1664 191 266 258 253 253 199 168 146	7:43	23:25	2.8 1.6	+
331 2	09.02.	59°10.2'S 52°21.1'W	3120	NCN	01:15	195	2000- 400	452	7:43	23:24	3.0 1.8	-
335 3	09.02.	59°29.4'S 53°01.4'W	4970	MOC1	11:05	-	0- 400	1172	7:45	23:29	3.5 2.8	+

Stat. Haul	Date 1981	Position	Water depth (m)	Net	start (GMT)	Haul dur. (min)	depth (m)	Filt. Vol. (m ³)	Sun- rise (GMT)	Sun- set (GMT)	Temp. Air Water (°C)	Comment
338 4	09.02.	59°00.0'S 51°57.5'W	3677	MOC1 MOC2 MOC3 MOC4	17:50	46 2 4 3	0- 150 150- 100 100- 50 50- 0	2483 194 312 324	7:43	23:22	4.3 3.1	+
339 5	09.02.	59°20.2'S 51°08.2'W	2580	NCN	22:40	25	400- 0	113	7:38	23:16	4.2 2.2	+
340 6	10.02.	59°40.1'S 50°17.1'W	3945	NCN	04:09	17	400- 0	113	7:35	23:16	2.8 0.7	-
340 7	10.02.	59°40.3'S 50°17.3'W	3940	NCN	04:45	60	2000- 400	452	7:35	23:16	2.7 0.7	-
341 8	10.02.	59°58.4'S 49°28.4'W	3925	MOC1 MOC2 MOC3 MOC4 MOC5 MOC6 MOC7 MOC8 MOC9	10:10	29 6 5 4 8 16 5 5 13	0- 400 400- 350 350- 300 300- 250 250- 200 200- 150 150- 100 100- 50 50- 0	1569 474 423 369 320 145 391 384 967	7:30	23:14	2.1 0.7	+
344 9	10.02.	60°20.4'S 48°23.2'W	4685	MOC1 MOC2 MOC3 MOC4 MOC5 MOC6 MOC7 MOC8 MOC9	22:02	27 7 7 8 4 4 4 2 2	0- 500 500- 400 400- 300 300- 200 200- 150 150- 100 100- 60 60- 30 30- 0	721 514 489 564 311 344 340 205 176	7:24	23:12	-0.9 0.1	-

Stat. Haul	Date 1981	Position	Water depth (m)	Net	start (GMT)	Haul dur. (min)	depth (m)	Filt. Vol. (m ³)	Sun- rise (GMT)	Sun- set (GMT)	Temp. Air Water (°C)	Comment
346 10	11.02.	60°39.4'S 47°30.2'W	1410	MOC1	04:00	30	0- 480	3928	7:22	23:07	-1.5 1.5	+
348 11	11.02.	59°55.4'S 46°20.5'W	4150	RMT1 RMT8	12:28	55	402-	2010 36109	7:23	22:56	-1.0 0.9	-
351 12	11.01.	59°27.1'S 45°30.1'W	1898	RMT1 RMT8	19:52	30	396-	1049 19512	7:19	22:53	0.3 1.8	-
353 13	12.02.	60°25.2'S 45°14.0'W	1552	RMT1 RMT8	04:24	24	200-	833 15193	7:16	22:54	-0.2 0.0	+
354 14	12.02.	60°45.3'S 45°27.5'W	310	RMT1 RMT8	11:40	26	205-	910 16577	7:16	22:56	0.1 -0.2	-
357 15	13.02.	61°24.5'S 47°14.2'W	947	RMT1 RMT8	15:52	23	200-	785 14857	7:22	23:04	0.8 1.0	+
358 16	14.02.	63°01.0'S 46°36.4'W	3000	RMT1 RMT8	01:20	19	148-	652 14460	7:14	23:06	0.9 0.7	+
360 17	14.02.	64°19.4'S 45°59.2'W	4460	MOC1 MOC2 MOC3 MOC4 MOC5 MOC6	12:30	17 7 1 2 5 6	0- 200 200- 150 150- 100 100- 60 60- 30 30- 0	709 480 125 183 354 448	7:04	23:11	0.6 0.2	+
362 18	14.02.	65°34.4'S 45°35.1'W	4050	RMT1 RMT8	21:16	20	212-	747 12636	6:54	23:18	0.6 0.3	+

Stat. Haul	Date 1981	Position	Water depth (m)	Net	start (GMT)	Haul dur. (min)	depth (m)	Filt. Vol. (m ³)	Sun- rise (GMT)	Sun- set (GMT)	Temp. Air Water (°C)	Comment
363 19	15.02.	66°06.2'S 45°10.0'W	4400	MOC1 MOC2 MOC3 MOC4 MOC5 MOC6	01:43	43 5 9 19 3 24	0- 500 500- 400 400- 300 340- 200 200- 150 150- 0	2814 435 778 1559 426 2509	6:52	23:16	1.5 0.3	+
365 20	15.02.	66°35.1'S 44°56.2'W	4100	RMT1 RMT8	09:40	32	510- 0	1180 20637	6:48	23:19	0.1 0.3	-
366 21	15.02.	66°34.4'S 44°56.5'W	4100	RMT1 RMT8	11:00	39	103- 0	1785 22530	6:48	23:19	0.1 0.2	+
367 22	16.02.	64°33.5'S 47°26.4'W	4245	RMT1 RMT8	00:50	25	212- 0	891 17708	7:15	23:12	-1.4 -0.1	+
369 23	16.02.	63°59.0'S 47°51.3'W	3845	RMT1 RMT8	11:22	17	198- 0	569 10809	7:19	23:10	-0.7 -0.1	+
370 24	16.02.	63°59.1'S 47°55.5'W	3775	RMT1 RMT8	12:07	35	100- 0	1392 21828	7:20	23:10	-0.7 -0.2	+
372 25	16.02.	63°58.0'S 49°23.1'W	3440	RMT1 RMT8	20:32	15	200- 0	616 9140	7:26	23:16	- -	-
374 27	17.02.	63°24.4'S 49°15.1'W	3340	RMT1 RMT8	01:15	24	193- 0	829 16614	7:31	23:09	- -	+
376 28	17.02.	63°20.1'S 49°00.2'W	3363	NCN	05:53	121	3350- 400	834	7:31	23:07	- -	-
376 29	17.02.	63°20.1'S 49°00.2'W	3360	NCN	08:17	20	400- 0	113	7:31	23:07	- -	-

Stat. Haul	Date 1981	Position	Water depth (m)	Net	start (GMT)	Haul dur. (min)	depth (m)	Filt. Vol. (m ³)	Sun- rise (GMT)	Sun- set (GMT)	Temp. Air (°C)	Temp. Water (°C)	Comment
377 30	17.02.	62°55.2'S 48°50.4'W	1912	MOC1 MOC2 MOC3 MOC4 MOC5 MOC6 MOC7 MOC8 MOC9	15:10	45	0- 400 400- 300 300- 250 250- 200 200- 150 150- 100 100- 60 60- 30 30- 0	2097 949 286 550 932 725 249 311 447	7:32	23:05	-	-	-
380 31	18.02.	62°23.2'S 50°10.0'W	2840	RMT1 RMT8	01:58	29	198- 0	1015 18573	7:43	23:04	-2.4	-	+
381 32	18.02.	62°26.4'S 50°14.5'W	3400	NCN	03:38	164	3395- 200	903	7:43	23:05	-	-	-
385 33	18.02.	62°29.2'S 51°29.1'W	3207	RMT1 RMT8	13:54	17	200- 0	654 10947	7:48	23:10	-	-	-
386 34	18.02.	62°51.2'S 52°41.4'W	1431	RMT1 RMT8	19:13	22	197- 0	760 14448	-	-	-	-	+
388 35	19.02.	62°32.0'S 54°07.1'W	440	RMT1 RMT8	01:47	26	375- 198	927 17169	8:01	23:17	-3.4	-1.3	-
390 36	19.02.	62°30.2'S 54°19.0'W	358	RMT1 RMT8	04:41	21	205- 0	730 13889	8:02	23:18	-3.4	-	-
391 37	19.02.	62°47.0'S 56°18.5'W	300	RMT1 RMT8	12:32	26	275- 0	901 16348	8:08	23:27	-	-	-
392 38	19.02.	62°59.0'S 56°51.1'W	67	RMT1 RMT8	15:27	8	67- 0	279 5211	8:10	23:30	-	-	-

Stat. Haul	Date 1981	Position	Water depth (m)	Net	start (GMT)	Haul dur. (min)	depth (m)	Filt. Vol. (m ³)	Sun- rise (GMT)	Sun- set (GMT)	Air Temp. (°C)	Water Temp. (°C)	Comment
393 39	20.02.	63°17.5'S 56°50.5'W	260	RMT1 RMT8	00:23	19	230-	0 656 12650	8:11	23:28	-	-	+
395 40	20.02.	62°53.4'S 57°04.4'W	140	RMT1 RMT8	09:13	10	133-	0 132 6389	8:14	23:28	-	-	+
399 41	20.02.	62°29.0'S 57°01.4'W	900	RMT1 RMT8	19:25	18	202-	0 718 10719	8:15	23:26	-	-	-
402 42	21.02.	62°20.2'S 57°29.4'W	1534	RMT1 RMT8	03:42	21	197-	0 729 13618	8:21	23:23	-	-	+
404 43	21.02.	62°05.0'S 57°40.5'W	310	RMT1 RMT8	09:01	16	212-	0 558 10600	8:22	23:23	-	-	+
405 44	21.02.	61°39.2'S 57°17.4'W	440	RMT1 RMT8	13:33	21	199-	0 734 13540	8:23	23:20	2.6	0.5	-
408 45	21.02.	61°14.0'S 57°17.0'W	2600	RMT1	19:57	15	207-	0 585	8:24	23:18	-	-	+
409 46	21.02.	61°20.5'S 56°00.2'W	398	RMT1 RMT8	23:44	15	200-	0 513 9677	8:19	23:14	-	-	+
412 47	22.02.	61°13.2'S 54°41.2'W	265	RMT1 RMT8	09:45	12	177-	0 456 7852	8:16	23:05	-	-	-
416 48	23.02.	60°45.2'S 55°41.2'W	3300	RMT1 RMT8	07:11	26	200-	0 969 16464	-	-	-	-	+
420 49	23.02.	60°51.1'S 55°53.0'W	2552	RMT1 RMT8	20:39	20	196-	0 858 11784	8:25	23:05	-	-	-

Stat. Haul	Date 1981	Position	Water depth (m)	Net	start (GMT)	Haul dur. (min)	depth (m)	Filt. Vol. (m ³)	Sun- rise (GMT)	Sun- set (GMT)	Temp. Air Water (°C)	Comment
421 50	24.02.	60°57.2'S 55°10.1'W	383	RMT1	00:30	21	188- 0	730	8:25	22:59	- -	+
425 52	24.02.	60°54.0'S 54°54.2'W	780	RMT1 RMT8	08:42	17	200- 0	655 10620	8:24	22:58	- -	-
426 53	24.02.	60°53.1'S 54°56.1'W	780	RMT1 RMT8	10:12	10	33- 42	489 5441	8:24	22:58	- -	+
428 54	24.02.	62°52.3'S 54°56.2'W	825	RMT1 RMT8	10:59	10	25- 17	385 6277	8:17	23:05	- -	+
429 55	24.02.	62°52.3'S 54°56.2'W	815	RMT1 RMT8	12:25	10	103- 80	423 5974	8:17	23:05	- -	+
430 56	24.02.	60°53.3'S 54°54.2'W	771	RMT1 RMT8	13:29	10	61- 45	375 6224	8:24	22:58	- -	+
431 57	24.02.	60°53.3'S 54°54.2'W	770	RMT1 RMT8	14:11	10	80- 61	406 6214	8:24	22:58	- -	+
432 58	24.02.	60°53.3'S 54°54.2'W	770	RMT1 RMT8	14:54	10	133- 88	427 6304	8:24	22:58	- -	+
433 59	24.02.	60°53.3'S 54°54.2'W	770	RMT1 RMT8	16:04	31	590- 200	1104 21190	8:24	22:58	- -	+
436 60	24.02.	60°55.1'S 54°55.2'W	770	MOC1 MOC2 MOC3 MOC4 MOC5 MOC6 MOC7	19:41	31 6 6 6 5 2 2	0- 280 250- 200 200- 150 150- 100 100- 60 60- 30 30- 0	1952 563 586 575 557 176 393	8:24	22:58	- -	-

Stat. Haul	Date 1981	Position	Water depth (m)	Net	start (GMT)	Haul dur. (min)	depth (m)	Filt. Vol. (m ³)	Sun- rise (GMT)	Sun- set (GMT)	Temp. Air Water (°C)	Comment
437 61	24.02.	60°55.1'S 54°54.5'W	765	NCN	22:15	40	760- 250	144	8:24	22:58	- -	+
439 62	25.02.	60°56.0'S 54°53.5'W	773	RMT1 RMT8	00:48	27	202- 93	942 18999	8:26	22:55	- -	+
440 63	25.02.	60°52.2'S 55°58.0'W	903	RMT8	01:45	10	18- 0	6072	8:31	22:59	- -	+
445 64	25.02.	61°01.4'S 55°07.1'W	107	RMT1	12:01	8	100- 0	289	8:27	22:56	- -	+
462 68	27.02.	60°54.1'S 54°48.4'W	760	RMT8	15:15	21	198- 0	13781	8:31	22:48	2.5 1.0	+
465 69	28.02.	60°57.1'S 54°54.5'W	752	RMT1 RMT8	00:55	16	30- 17	618 9465	8:34	22:46	1.8 0.8	+
465 70	28.02.	60°57.1'S 54°54.5'W	752	RMT1	01:31	6	20- 0	239	8:34	22:46	1.9 1.1	+
465 71	28.02.	60°57.0'S 54°55.0'W	750	RMT1 RMT8	13:52	8	33- 23	385 4229	8:34	22:46	2.4 1.1	-
465 72	28.02.	60°57.0'S 54°55.0'W	750	RMT1 RMT8	14:45	18	48- 0	663 11795	8:34	22:46	2.0 2.1	-
465 73	28.02.	60°57.0'S 54°55.0'W	750	RMT1 RMT8	15:20	10	50- 30	349 6416	8:34	22:46	2.0 1.0	-
465 74	28.02.	60°56.5'S 54°55.4'W	820	RMT1 RMT8	18:00	17	600- 403	592 11118	8:34	22:46	2.4 1.1	+
465 75	28.02.	60°54.3'S 54°57.5'W	809	RMT1 RMT8	19:50	13	415- 199	602 3518	8:34	22:46	1.9 1.1	+

Stat. Haul	Date 1981	Position	Water depth (m)	Net	start (GMT)	Haul dur. (min)	depth (m)	Filt. Vol. (m ³)	Sun- rise (GMT)	Sun- set (GMT)	Temp. Air Water (°C)	Comment
466 75	01.03.	61°00.1'S 54°58.0'W	570	NCN	03:30	30	570-	161	8:42	22:35	1.6 0.9	-
467 77	01.03.	60°58.5'S 54°42.3'W	640	RMT1 RMT8	12:42	12	393- 200	541 7072	8:41	22:34	1.0 0.6	-
467 78	01.03.	60°58.0'S 54°41.0'W	640	RMT1 RMT8	14:05	14	200- 0	557 8367	8:41	22:34	-0.5 1.0	+
470 79	02.03.	61°00.1'S 54°45.0'W	560	RMT1 RMT8	13:00	13	147- 0	454 7298	8:44	22:31	-1.3 0.5	+
473 81	02.03.	61°01.1'S 54°44.4'W	560	RMT1 RMT8	15:38	10	53- 27	396 6301	8:44	22:31	-0.9 0.6	+
474 82	02.03.	61°01.1'S 54°44.4'W	560	RMT1 RMT8	16:17	11	90- 76	392 6681	8:44	22:31	-1.1 0.6	+
475 83	02.03.	61°01.1'S 54°44.4'W	560	RMT1 RMT8	17:07	10	145- 121	417 6122	8:44	22:31	-0.9 0.6	+
476 84	02.03.	61°01.1'S 54°44.4'W	560	RMT1 RMT8	18:30	11	40- 16	462 6679	8:44	22:31	-1.2 0.6	-
481 87	03.03.	60°59.2'S 54°41.5'W	624	RMT1 RMT8	02:43	28	572- 398	1395 15742	8:47	22:28	-4.0 0.5	-
482 88	03.03.	60°59.0'S 54°43.3'W	626	RMT1 RMT8	04:47	14	401- 188	643 7789	8:47	22:28	-0.8 0.5	-
483 89	03.03.	60°59.2'S 54°42.5'W	583	RMT1 RMT8	06:27	16	200- 0	601 11583	8:47	22:28	-0.8 0.3	+

END ANT III

5.4. Comments to stations

23/ 4 3 juvenile specimens of Euphausia superba sorted from the sample
23/ 1 double oblique haul (nets open during paying out and retrieving)
25/ 2 double oblique haul
36/ 3 down 140 m no data transmission, double oblique haul
68/ 4 double oblique haul
74/40 subsample: 1/2 of catch
77/43 sample bottle poured out
80/ 5 double oblique haul
81/ 6 double oblique haul, RMT 1: large quantity of phytoplankton causes "clogging"
82/ 7 see 81/6
83/ 8 see 81/6
84/ 9 see 81/6
87/10 double oblique haul
98/11 double oblique haul
103/12 double oblique haul
106/13 double oblique haul, haul close to sea floor
135/14 double oblique haul
136/15 double oblique haul, identification haul
138/16 double oblique haul
139/68 subsample: 1/2 of catch
140/17 double oblique haul
141/18 double oblique haul
142/19 double oblique haul
143/20 double oblique haul
144/72 subsample: 1/10 of catch
145/21 double oblique haul
146/22 double oblique haul
147/23 double oblique haul
148/77 sample divided into two
149/24 double oblique haul
165/25 30 adult E. superba removed from sample
180/27 no RMT 8 sample
181/28 3 myctophids removed from sample and preserved separately, large quantities of phytoplankton
186/29 double oblique haul
190/30 500 ml E. superba removed from RMT 8 sample
194/31 during haul echo marks in 90-110 m water depth, 80 specimens of E. superba removed from RMT 8 sample and deep-frozen
198/32 RMT 8 sample: 40 E. superba sorted and deep-frozen
218/33 down 145 m no data transmission, double oblique haul
223/34 double oblique haul, no data transmission, error in net monitor
231/35 echo sounder: krill marks in 80 m depth, 70 E. superba removed from RMT 8 sample
235/36 echo sounder: krill marks in 80-110 m
245/37 echo sounder: krill marks in 80-100 m
264/37 double oblique haul
265/38 RMT 8 catch: 28000 ml, subsample 14000 ml, large quantities of E. superba, double oblique haul

271/39 double oblique haul, 30 E. superba sorted from RMT 8 sample
 276/40 double oblique haul, large quantities of phytoplankton in RMT 1 liner
 281/17 large quantities of phytoplankton
 283/41 double oblique haul, 35 pelagic fishes removed from samples and deep-frozen
 287/43 no RMT 1 sample
 294/44 double oblique haul, weak krill marks on echo sounder in 0-90 m depth
 301/45 station inside Deception lagoon
 304/19 phytoplankton causes "net clogging"
 307/46 16 myctophids sorted from sample and deep-frozen
 312/47 10 big specimens of E. superba removed from RMT 8 sample
 314/48 RMT 8 clogged by big medusa
 315/49 during retrieval RMT stopped for some minutes in 58 m water depth
 317/51 station north of Antarctic Convergence
 319/53 samples preserved for plankton demonstration at Kiel University
 330/ 1 MOC 1: catch not preserved
 335/ 3 error in electronical transmission, only MOC 1-catch preserved
 338/ 4 bad weather causes interruption of haul, no MOC 2-catch
 339/ 5 very bad weather
 341/ 8 net response not clear
 346/10 technical defect causes double oblique haul (0-480-0 m)
 353/13 RMT 8 catch: 3 myctophids removed and deep-frozen
 357/15 25 E. superba and 40 Calanus propinquus removed from samples
 358/16 37 E. superba removed from sample, 9 myctophids deep-frozen
 360/17 MOC 1: catch not preserved
 362/18 RMT 8: 155 juvenile E. superba removed from sample
 363/19 MOC 1: catch not preserved
 366/21 double oblique haul, no RMT 8 sample
 367/22 RMT 8: 46 E. superba removed from sample, 5 myctophids removed and deep-frozen
 369/23 RMT 8: 51 E. superba removed from sample
 370/24 double oblique haul, sample not quantitative
 374/27 RMT 8: unknown number of E. superba removed from the sample, 19 myctophids removed and deep-frozen
 380/31 RMT 8: total catch 9000 ml, subsample taken 2000 ml
 386/34 95 E. superba removed from samples
 393/39 65 salps removed from samples
 395/40 RMT 1: incompletely opened, no quantitative sampling
 402/42 RMT 8: total catch 40000 ml, subsample taken 3000 ml
 404/43 in RMT 8 net: remains of previous haul
 408/45 RMT 8: net not opened, no RMT 8 catch
 409/46 RMT 1: 50 ml of krill larvae removed and deep-frozen

416/48 5 E. superba removed from sample, 5 myctophids removed and deep-frozen
 421/50 only sample of RMT 1 preserved
 426/53 horizontal haul in krill patch, "patch study"
 428/54 see 426/53
 429/55 see 426/53
 430/56 see 426/53
 431/57 see 426/53
 432/58 see 426/53
 433/59 see 426/53; 19 myctophids removed and deep-frozen, 1 decapod removed
 437/61 RMT 1: krill larvae removed from sample (16 eggs, 2 nauplii, 1 metanauplius)
 439/62 double oblique haul, RMT 8: total catch 4500 ml subsample taken 2000 ml
 440/63 RMT 1: no catch, RMT 8: total catch 25000 ml, subsample taken 2000 ml
 445/64 RMT 8: no sample preserved
 462/68 RMT 1: no sample preserved
 465/69 RMT 8: sampling not quantitative, only subsample taken
 465/70 double oblique haul, only RMT 1 sample preserved
 465/74 myctophids of RMT 8 sample removed and frozen
 465/75 RMT 8: incompletely opened, no quantitative sampling
 467/78 RMT 8: 23 E. superba removed from sample
 470/79 RMT 8: incompletely opened, no quantitative sampling
 473/81 RMT 8: total catch 4000 ml, subsample taken 2000 ml
 474/82 RMT 8: total catch 30000 ml, subsample taken 2000 ml
 475/83 RMT 8: total catch 13000 ml, subsample taken 2000 ml
 483/89 RMT 8: total catch 41000 ml, subsample taken 2000 ml

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